

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application. In particular, claims 1, 3-6, 9, 11-14, 17, 21, 22, 25, 29 and 30 have been amended. Claims 2, 10, 18 and 26 have been cancelled without prejudice.

**Listing of Claims:**

1. (Currently Amended) A method for monitoring cell voltages for a plurality of electrochemical cells connected in series forming a cell stack, the method comprising:

- a) dividing the plurality of electrochemical cells into at least two cell groups;
- b) determining an average cell stack voltage  $V_{sa}$ ;
- c) measuring a cell group voltage  $V_g$  for each cell group;
- d) estimating a minimum cell voltage  $V_{mi}$  for each cell group to obtain a set of minimum cell voltages, the minimum cell voltage for a given cell group being

estimated according to  $V_{mi} = \frac{V_g}{M} - \frac{(N - M) * V_{sa}}{M}$  where N is a number of cells in the cell

group, and M is an estimated number of cells operating below the average cell stack voltage; and,

- e) determining a minimum cell voltage  $V_{min}$  for the cell stack by finding the minimum value in the set of minimum cell voltages  $V_{mi}$ .

2. (Cancelled)

3. (Currently Amended) A method as claimed in claim [[2]]1, wherein the method further comprises:

- f) activating an alarm when the minimum cell voltage  $V_{min}$  for the cell stack is equal to or less than a first threshold value.

4. (Currently Amended) A method as claimed in claim [[2]]1, wherein the method further comprises:

f) shutting down the cell stack when the minimum cell voltage  $V_{min}$  for the cell stack is equal to or less than a second threshold value.

5. (Currently Amended) A method as claimed in claim [[2]]1, wherein the number of cells N in the cell group is 4.

6. (Currently Amended) A method as claimed in claim [[2]]1, wherein the estimated number of cells M operating below the average cell stack voltage is 1.

7. (Original) A method as claimed in claim 3, wherein the first threshold value is 0.5 V.

8. (Original) A method as claimed in claim 4, wherein the second threshold value is 0.3 V.

9. (Currently Amended) A voltage monitoring system for monitoring cell voltages for a plurality of electrochemical cells connected in series forming a cell stack, the plurality of electrochemical cells [[groups]] being divided into at least two cell groups, the voltage monitoring system comprising:

a) a voltage measuring unit for measuring a cell group voltage  $V_g$  for each cell group, and a cell [[a]] stack voltage  $V_{sa}$  for the cell stack; and,

b) a processing means connected to the voltage measuring unit for calculating an average cell stack voltage  $V_{sa}$ , estimating a cell group minimum cell voltage  $V_{mi}$  for each cell group to obtain a set of minimum cell voltages, and determining a minimum cell voltage  $V_{min}$  for the cell stack by finding the minimum value in the set of minimum cell voltages wherein the processing means estimates the minimum cell

voltage for a given cell group according to 
$$V_{mi} = \frac{V_g}{M} - \frac{(N - M) * V_{sa}}{M}$$
 where N is a number

of cells in the cell group, and M is an estimated number of cells operating below the average cell stack voltage.

10. (Cancelled)

11. (Currently Amended) A voltage monitoring system as claimed in claim [[10]]9, wherein the processing means activates an alarm when the minimum cell voltage  $V_{min}$  for the cell stack is equal to or less than a first threshold value.

12. (Currently Amended) A voltage monitoring system as claimed in claim [[10]]9, wherein the processing means shuts down the cell stack when the minimum cell voltage  $V_{min}$  for the cell stack is equal to or less than a second threshold value.

13. (Currently Amended) A voltage monitoring system as claimed in claim [[10]]9, wherein the number of cells N in the cell group is 4.

14. (Currently Amended) A voltage monitoring system as claimed in claim [[10]]9, wherein the estimated number of cells M operating below the average cell stack voltage is 1.

15. (Original) A voltage monitoring system as claimed in claim 11, wherein the first threshold value is 0.5 V.

16. (Original) A voltage monitoring system as claimed in claim 12, wherein the second threshold value is 0.3 V.

17. (Currently Amended) A method for monitoring cell voltages for a plurality of electrochemical cells connected in series forming a cell stack, the method comprising:

- a) dividing the plurality of electrochemical cells into at least two cell groups;
- b) determining an average cell stack voltage  $V_{sa}$ ;

- c) measuring a cell group voltage  $V_g$  for one of the cell groups;
- d) estimating a minimum cell voltage  $V_{mi}$  for the one of the cell groups

according to  $V_{mi} = \frac{V_g}{M} - \frac{(N - M) * V_{sa}}{M}$  where N is a number of cells in the cell group, and M is an estimated number of cells operating below the average cell stack voltage;

- e) comparing the minimum cell voltage  $V_{mi}$  to a threshold value; and,
- f) repeating steps c, d and e until one of the minimum cell voltages  $V_{mi}$  is less than or equal to the threshold value or the minimum cell voltage for each of the cell groups has been estimated.

18. (Cancelled)

19. (Original) A method as claimed in claim 17, wherein the method further comprises:

- g) activating an alarm when the minimum cell voltage  $V_{min}$  for the cell stack is equal to or less than the threshold value.

20. (Original) A method as claimed in claim 17, wherein the method further comprises:

- g) shutting down the cell stack when the minimum cell voltage  $V_{min}$  for the cell stack is equal to or less than the threshold value.

21. (Currently Amended) A method as claimed in claim [[18]]17, wherein the number of cells N in the cell group is 4.

22. (Currently Amended) A method as claimed in claim [[18]]17, wherein the estimated number of cells M operating below the average cell stack voltage is 1.

23. (Original) A method as claimed in claim 19, wherein the threshold value is 0.5 V.

24. (Original) A method as claimed in claim 20, wherein the threshold value is 0.3 V.

25. (Currently Amended) A voltage monitoring system for monitoring cell voltages for a plurality of electrochemical cells connected in series forming a cell stack, the plurality of electrochemical cells [[groups]] being divided into at least two cell groups, the voltage monitoring system comprising:

a) a voltage measuring unit for measuring a cell group voltage  $V_g$  for each cell group, and a cell [[a]] stack voltage  $V_s$  for the cell stack; and,

b) a processing means connected to the voltage measuring unit for calculating an average cell stack voltage  $V_{sa}$ , repeatedly estimating a cell group minimum cell voltage  $V_{mi}$  for one of the cell groups and comparing the minimum cell voltage  $V_{mi}$  to a threshold value until one of the minimum cell voltages  $V_{mi}$  is less than or equal to the threshold value or the minimum cell voltage  $V_{mi}$  for each of the cell groups has been estimated wherein the processing means estimates the minimum cell voltage

for the one of the cell groups according to 
$$V_{mi} = \frac{V_g}{M} - \frac{(N - M) * V_{sa}}{M}$$
 where N is a number

of cells in the one of the cell groups, and M is an estimated number of cells operating below the average cell stack voltage.

26. (Cancelled)

27. (Original) A voltage monitoring system as claimed in claim 25, wherein the processing means activates an alarm when the minimum cell voltage  $V_{min}$  for the cell stack is equal to or less than the threshold value.

28. (Original) A voltage monitoring system as claimed in claim 25, wherein the processing means shuts down the cell stack when the minimum cell voltage  $V_{min}$  for the cell stack is equal to or less than the threshold value.

29. (Currently Amended) A voltage monitoring system as claimed in claim [[26]]25, wherein the number of cells N in the cell group is 4.

30. (Currently Amended) A voltage monitoring system as claimed in claim [[26]]25, wherein the estimated number of cells M operating below the average cell stack voltage is 1.

31. (Original) A voltage monitoring system as claimed in claim 27, wherein the threshold value is 0.5 V.

32. (Original) A voltage monitoring system as claimed in claim 28, wherein the threshold value is 0.3 V.